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EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/720,932

Applicant(s)

BEAMER, BRENT

Examiner

Kevin R Kruer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-3 and 5-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

Examination of this application has been reopened because the previous office actions failed to address claims 12 and 13. The examiner apologizes for this oversight. The amendment filed May 30, 2003 has been entered and has been considered in the following office action.

Claim Objections

The objection to claim 14 has been overcome by amendment.

The objection to claim 16 has been overcome by amendment.

Claim Rejections - 35 USC § 112

The rejection of claims 2-11 under 35 U.S.C. 112, second paragraph, because the claims recited "a first metallized surface" and "a second nonmetallized surface" has been overcome by amendment.

The rejection of claims 2-11 under 25 U.S.C. 112 second paragraph for use of the indefinite term "low charge retaining coating" has been overcome. The term will now be understood to read on coatings with a conductivity in the range of 1×10^{-3} - 1×10^{-9} Seimens, as disclosed on page 9, lines 19+ of the specification.

The rejection of claims 2-11 under 25 U.S.C. 112 second paragraph for use of the indefinite phrase "dimensionally stable" has been overcome by amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 5, 6, 8-10, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mott (US 4,756,414) in view of White (US 4,699,830). Mott teaches a flexible sheet material and useful as a package for electrostatically sensitive components (col 1, lines 5+). The sheet comprises a first flexible heat sealable plastic material with antistatic properties on at least the one major surface thereof laminated to a second flexible plastic material with an electrically conductive material on the one major surface thereof and antistatic properties on the other major surface thereof (abstract). As the electrically conductive material that is on one major surface of the second flexible plastic material, a metal may be deposited using well-known vacuum deposition or sputter techniques (col 2, lines 54+). Preferred metals include aluminum, stainless steel, nickel, copper, and mixtures thereof (col 5, lines 35+). The metal is typically 50-200 Angstroms thick and has a surface resistivity of about 100 ohms/sq. The first and second flexible sheets are joined together utilizing a thermosetting adhesive (col 2, lines 63+). The antistatic properties are provided to the first flexible heat sealable plastic material by applying to the surface an antistatic material with a conductivity of 10^6 to about 10^{13} ohms/square (col 4, lines 40+).

Mott does not teach that a second moisture barrier layer should be attached to the taught laminate. However, White teaches a laminate material which can be used to form packages of electrically sensitive components. The laminate includes an antistatic layer providing a surface resistivity of 10^8 to about 10^{13} ohms/sq. A first conductive metal layer is adhered to the antistatic layer and provides a surface resistivity of less

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than about 10^5 ohms/sq. A carrier film layer is adhered to the first conductive metal layer by any suitable means (col 4, line 28) such as adhesion or deposition (col 5, line 19). A second conductive metal layer is adhered to the carrier film layer (abstract). The second conductive metal layer may be adhered, bonded, or deposited onto the carrier sheet using any conventional technique such as vacuum or sputter metallization (col 5, lines 19-21). Preferred metals include aluminum, nickel, cadmium, tin, chromium, lead, copper, zinc, and compounds and mixtures thereof (col 5, lines 44-49). A transparent protective layer is adhered to the second conductive metal layer to protect the metal layer from abrasion and oxidation. The surface resistivity of the combined clear protective layer and second conductive metal layer is between 10^4 - 10^8 ohms/square (abstract). The second conductive layer provides rapid static discharge capability to ground for effectively bleeding any charges introduced to the surface of the structure. The second conductive layer also exhibits or enhances the effect of the Faraday cage of the overall structure of the package (col 5, lines 15-49). Thus, it would have been obvious to one of ordinary skill in the art to apply, by any suitable means such as adhesion, a carrier film and a second conductive metal layer to the laminate taught in Mott in order to provide rapid static discharge capability to the ground for effective bleeding of any charge introduced on the surface of the structure and to enhance the Faraday cage of the overall package. Furthermore, it would have been obvious to apply protective coat (which reads on applicant's claimed "low charge retaining coating) to the second conductive metal layer to protect the metal layer from abrasion and oxidation.

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With respect to claim 5, White does not teach the thickness of the metal layer on the carrier layer should have the claimed thickness. However, White does teach that the thickness of the metal will vary depending upon desired surface resistivity (col 5, line 25). Furthermore, it is known in the art that the laminate's transparency improves as the thickness of the metal layer decreases. White teaches that the layers are selected in order to allow light transmission (col 5, lines 50+). Thus, it would have been obvious to one of ordinary skill in the art to vary the thickness of the metal layer taught in White in order to optimize the film's transparency and surface resistivity.

With respect to claim 27 and 28, the examiner takes the position that the above cited art inherently meets the moisture barrier properties claimed because the cited art teaches the same laminate as that claimed by Applicant. Alternatively, it is known in the art (see US 5,091,229, col 5, lines 4+) that the metal layers of the cited art also provide the laminate with moisture resistance. Furthermore, it is known in the art that water resistance is desirable in the packaging art in order to avoid damage to the packaged good. Thus, it would have been obvious to one of ordinary skill in the art to vary the thickness of the metal foils and/or deposition layers taught in the cited art in order to provide the laminate with the desired water resistance

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mott (US 4,756,414) in view of White (US 4,699,830), as applied to claims 1-3, 5, 6, 8-10, 27, and 28, and further in view of Ohlbach (US 4,293,070). Mott in view of White is relied upon as above. Specifically, White teaches that the protective layer preferably is an acrylic-based coating that controls the resistivity of the outer surface of the package. White

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does not teach that the resistivity can be controlled by coating carbon onto the acrylic protective layer. However, Ohlbach teaches the coating of a surface with carbon black in order to obtain the desired static resistivity on a surface (see abstract). Thus, it would have been obvious to coat carbon black on the surface of the acrylic protective coating taught in White in order to obtain the desired static resistivity on the outer surface of the package.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mott (US 4,756,414) in view of White (US 4,699,830), as applied to claims 1-3, 5, 6, 8-10, 27, and 28, and further in view of Akao et al. (US 4,906,517). Mott in view of White is relied upon as above. Specifically, White teaches that the protective layer preferably is an acrylic-based coating that controls the resistivity of the outer surface of the package. White does not teach that the resistivity can be controlled by adding carbon to the protective layer. However, Akao teaches that carbon may be added to the protective layer applied over the surface of a metallic film in order to improve a packaging laminate's ability to dissipate static electricity (col 9, lines 8+). Thus, it would have been obvious to one of ordinary skill in the art to add carbon to the acrylic protective layer taught in White in order to obtain the desired resistivity for the outer surface of the package.

4. Claims 1 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (US 4,699,830) in view of Dahringer et al. (US 5,689,878). White teaches a laminate material which can be used to form packages of electrically sensitive components: The laminate includes an antistatic layer providing a surface resistivity of

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10^8 to about 10^{13} ohms/sq. The antistatic layer preferably comprises a polyolefin which has been bulk treated during their compounding step through the addition of an additive that minimizes charge generation (col 4, lines 2+). A first conductive metal layer is adhered to the antistatic layer and provides a surface resistivity of less than about 10^5 ohms/sq. A carrier film layer is adhered to the first conductive metal layer by any suitable means (col 4, line 28) such as adhesion or deposition (col 5, line 19). A second conductive metal layer is adhered to the carrier film layer (abstract). The second conductive metal layer may be adhered, bonded, or deposited onto the carrier sheet using any conventional technique such as vacuum or sputter metallization (col 5, lines 19-21). Preferred metals include aluminum, nickel, cadmium, tin, chromium, lead, copper, zinc, and compounds and mixtures thereof (col 5, lines 44-49). A transparent protective layer is adhered to the second conductive metal layer to protect the metal layer from abrasion and oxidation. The surface resistivity of the combined clear protective layer and second conductive metal layer is between 10^4 - 10^8 ohms/square (abstract). The second conductive layer provides rapid static discharge capability to ground for effectively bleeding any charges introduced to the surface of the structure. The second conductive layer also exhibits or enhances the effect of the Faraday cage of the overall structure of the package (col 5, lines 15-49).

White does not teach that the second conductive metal layer should comprise a metal foil. However, Dahringer teaches an assembly for protecting the active electronic components of an electronic product from environment and electromagnetic interference (abstract). The assembly includes multiple layers of polymeric material that

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provide diffusion barrier properties, and a metallic layer that provides diffusion barrier properties and EMI shielding properties (abstract). To provide the laminate with the desired diffusion barriers, the metallic layer is preferably a laminated foil (col 5, lines 59-56). Thus, it would have been obvious to one of ordinary skill in the art to utilize a foil as the second conductive metal layer of the laminate taught by White in order to improve the package's diffusion barrier properties.

With respect to claim 25, White does not teach the thickness of the metal layer on the carrier layer should have the claimed thickness. However, White does teach that the thickness of the metal will vary depending upon desired surface resistivity (col 4, line 40). Furthermore, it is known in the art that the laminate's transparency improves as the thickness of the metal layer decreases. White teaches that the layers are selected in order to allow light transmission (col 5, lines 50+). Thus, it would have been obvious to one of ordinary skill in the art to vary the thickness of the metal layer taught in White in order to optimize the film's transparency and surface resistivity.

With respect to claims 26 and 27, The examiner takes the position that the above cited art inherently meets the moisture barrier properties claimed because the cited art teaches the same laminate as that claimed by Applicant. Alternatively, it is known in the art (see US 5,091,229, col 5, lines 4+) that the metal layers of the cited art also provide the laminate with moisture resistance. Furthermore, it is known in the art that water resistance is desirable in the packaging art in order to avoid damage to the packaged good. Thus, it would have been obvious to one of ordinary skill in the art to vary the

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thickness of the metal foils and/or deposition layers taught in the cited art in order to provide the laminate with the desired water resistance

5. Claims 1, 12-18, 22, 27, and 29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Havens (US 5,180,615) in view of White (US 4,699,830) and Dahringer et al. (US 5,689,878). Havens teaches a flexible sheet material for packaging electrostatically sensitive items. The sheet has a metal layer and an antistatic layer (abstract). The antistatic layer comprises a resistivity of no less than about 10^8 ohms/square (col 2, line 39). The laminate optionally has a polymeric insulative layer sandwiched between the metal layer and the antistatic layer (col 3, lines 1+). The metal layer is laminated to the antistatic layer via corona lamination, adhesive lamination, or a combination thereof (col 3, line 39). The metal may comprise aluminum, stainless steel, copper, nickel, and mixtures thereof (col 3, lines 39+) and preferably has a thickness of less than 300 angstroms so that the finished bag is transparent (col 3, lines 42+).

Havens does not teach that the packaging laminate should comprise a second metal conductive layer and a low charge retaining coating. However, White teaches a laminate material that may be used to form packages for electrically sensitive components. The laminate includes an antistatic layer providing a surface resistivity of 10^8 to about 10^{13} ohms/sq. A first conductive metal layer is adhered to the antistatic layer and provides a surface resistivity of less than about 10^5 ohms/sq. A carrier film layer is adhered to the first conductive metal layer. A second conductive metal layer is adhered to the carrier film layer via depositing, bonding, or adhering (col 5, line 19). A transparent protective layer is adhered to the second conductive metal layer to protect

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the metal layer from abrasion and oxidation and for maintaining the outer surface resistivity of the combined clear protective layer and second conductive metal layer in the range of 10^4 to about 10^8 ohms per square (abstract). The second conductive layer provides rapid static discharge capability to ground for effectively bleeding any charges introduced to the surface of the structure. The second conductive layer also exhibits or enhances the effect of the Faraday cage of the overall structure of the package (col 5, lines 15-49). Thus, it would have been obvious to one of ordinary skill in the art to apply, by any known means such as adhesion or deposition, a carrier film and a second conductive metal layer to the laminate taught in Havens in order to provide rapid static discharge capability to the ground for effective bleeding of any charge introduced on the surface of the structure and to enhance the Faraday cage of the overall package. Furthermore, it would have been obvious to apply protective coat (which reads on applicant's claimed "low charge retaining coating) to the second conductive metal layer to protect the metal layer from abrasion and oxidation.

Havens also does not teach that the metal layer should comprise a metal foil. However, Dahringer teaches an assembly for protecting the active electronic components of an electronic product from environment and electromagnetic interference (abstract). The assembly includes multiple layers of polymeric material that provide diffusion barrier properties, and a metallic layer that provides diffusion barrier properties and EMI shielding properties (abstract). To provide the laminate with the desired diffusion barriers, the metallic layer is preferably a laminated foil (col 5, lines 59-56). Thus, it would have been obvious to one of ordinary skill in the art to utilize a foil as

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the metal layer of the laminate taught by Havens in order to improve the package's diffusion barrier properties.

With respect to claim 18, Havens does not teach the claimed thickness of the film. However, the examiner takes the position that it would have been obvious to one of ordinary skill in the art to vary the thickness of the film in order to improve processability, durability, and aesthetics.

With respect to claim 21, White does not teach the thickness of the metal layer on the carrier layer should have the claimed thickness. However, White does teach that the thickness of the metal will vary depending upon desired surface resistivity (col 5, line 25). Furthermore, it is known in the art that the laminate's transparency improves as the thickness of the metal layer decreases. White teaches that the layers are selected in order to allow light transmission (col 5, lines 50+). Thus, it would have been obvious to one of ordinary skill in the art to vary the thickness of the metal layer taught in White in order to optimize the film's transparency and surface resistivity.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Havens (US 5,180,615) in view of White (US 4,699,830) and Dahringer et al. (US 5,689,878), as applied to claims 1,14-18, 22, 27, and 29 above, and further in view of Rayford et al. (US 4,738,882). Havens in view of White and Dahringer is relied upon as above, but does not teach that the dielectric polymer should be biaxially oriented. However, Rayford teaches an antistatic laminated sheet material for the protection of electronic components from electrostatic charges (abstract). The laminate comprises a metal layer and an insulating layer. Rayford teaches that the insulating layer should be

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biaxially oriented in order to produce a material of high tensile modulus (col 2, lines 62+). Thus, it would have been obvious to one of ordinary skill in the art to biaxially orient the insulating layer taught in Havens in order to improve the tensile modulus of the laminate.

7. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havens (US 5,180,615) in view of White (US 4,699,830) and Dahringer et al. (US 5,689,878) and Rayford et al. (US 4,738,882), as applied to claims 1, 14-19, 22, 27, and 29 above, and further in view of Mott (US 4,756,414). Havens in view of White, Dahringer, and Rayford is relied upon as above, but does not teach that the carrier film may be polyethylene. However, Mott teaches a package used for forming packages or the like for containing electrostatically sensitive components and protecting them against electrostatic discharge. Mott teaches that the carrier film of a metallized layer may comprise polypropylene or polyethylene (col 4, lines 66+). Thus, it would have been obvious to one of ordinary skill in the art to utilize polyethylene as the carrier film taught in White because Mott teaches polyethylene is functionally equivalent to the carrier layers taught in White.

Response to Arguments

Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection. However, in hopes of expediting prosecution of the claims, the examiner would like to take this opportunity to respond to some of Applicant's arguments that are relevant to the newly applied rejections.

Applicant argues that the combination of Mott in view of White would not result in the claimed invention. Specifically, Applicant argues that Mott teaches that the metal surface may be "discontinuous and/or have pinholes," which fails to recognize the moisture barrier problem of the present invention. The examiner respectfully disagrees. The closest embodiment of Mott is continuous and does not have pinholes. Furthermore, there is nothing in the original disclosure that suggests the limitation "moisture barrier" excludes films that are discontinuous or have pinholes.

Furthermore, Applicant argues that the metallized layers of White are selected in order to be light transmissive. Transparent metal films, according to applicant, will not provide the claimed moisture barrier properties. However, applicant provides no support for the conclusion that a transparent metal layer will not provide the claimed moisture barrier properties. The arguments of counsel alone cannot take the place of evidence in the record once an examiner has advanced a reasonable basis for questioning the disclosure. White further teaches that the metallized layer and the protective layer (which is taken to read on the claimed low charge retaining layer) should have a conductivity of 10^{-4} - 10^{-8} Siemens (NOTE: the inverse of ohms/square is Siemens). It is known in the art that the thickness of a metallized layer is proportional to the conductivity of that layer. Since the conductivity of the protective layer and the metallized layer taught in White is encompassed by the desired conductivity of the low charge retaining layer and metallized layer taught the present application (see page 5), the examiner concludes that the thickness of the metallized layer taught in White must

correlate to the thickness of the claimed metallized layer possessing the claimed moisture barrier properties.

Applicant further argues that there is no suggestion in the art to combine other layers with the laminate taught in White in order to provide a dual moisture barrier structure as provided by the present invention. While the examiner concedes that the applied art does not teach the benefit of a dual moisture barrier structure, the examiner reminds applicant that the motivation provided by the prior art does not have to be the same motivation relied upon by the Applicant.

Applicant further argues that claimed invention requires a nonmetallized surface of the first barrier be attached to the static dissipative polymer or antistatic layer. The examiner disagrees with applicant's interpretation of the claims. The claims require the barrier layer to have a nonmetallized layer and for the barrier layer to be attached via a tie layer to the heat sealable static dissipative layer. The examiner would be happy to discuss possible claim language with Applicant if they intend for the claims to be limited to films wherein the tie layer is directly adhered to the nonmetallized surface of the barrier layer.

The combination of Havens in view of White and Dahringer is also traversed. Applicant argues that both Havens and White teach transparent metal layers and, therefore, do not provide the claimed moisture barrier properties. However, as pointed out above, the examiner has concluded that the metallized layer of the claimed invention and the thickness of the metallized film taught in White correlate to one another. The metallic layer of Havens is taught to be less than 300 angstroms thick,

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which overlaps the preferred thickness of the claimed first metallized surface (see page 9, first paragraph). Since each of the metallized layer meet the preferred embodiments of the claimed metallized films, the examiner maintains the combination necessarily meets the claimed moisture barrier properties.

Applicant further argues that Dahringer is not related art. The examiner respectfully disagrees. Both Havens and Dahringer are drawn to packaging materials with Faraday cages/conductive layers. Furthermore, both references are concerned with the static properties of said films.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 703-305-0025. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

KRK

KRK
June 5, 2003

Paul Thibodeau
Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700